CLAIMS

1. (Previously presented) An optical communication device comprising:

a continuous time filter having an adjustable bandwidth, wherein the continuous time filter is configured to reduce channel induced pre-cursor interference in an incoming data signal and generate a filtered incoming data signal;

a decision feedback equalizer, coupled to the continuous time filter, and configured to reduce post-cursor interference in the filtered incoming data signal and output a compensated signal and equalized data; and

a bandwidth controller configured to receive the compensated signal from the decision feedback equalizer and estimate a bandwidth error of the continuous time filter based thereon, the bandwidth controller further configured to generate a control signal based on the bandwidth error and to adjust the bandwidth of the continuous time filter using the control signal, and thereby reduce the bandwidth error as determined from the decision feedback equalizer.

2. (Previously presented) The communication device of claim 1 wherein the continuous time filter is configured to pre-distort the incoming data signal, based on the control signal, to thereby improve an operation of the decision feedback equalizer.

3. (Original) The communication device of claim 1 wherein the continuous time filter comprises at least one cascaded low pass filter.

4. (Previously presented) The communication device of claim 3 wherein each of the at least one cascaded low pass filter comprises a differential pair of transistors having adjustable capacitive loads coupled to outputs of the differential pair of transistors and configured to adjust the bandwidth of the at least one cascaded low pass filter in response to the control signal.

5. (Previously presented) The communication device of claim 1 wherein the decision feedback equalizer comprises a summer that is configured to generate the compensated signal by combining an equalized feedback signal with the filtered incoming data signal.

6. (Previously presented) The communication device of claim 5 wherein the bandwidth controller comprises:

an analog to digital converter, coupled to the summer, that is configured to digitize the compensated signal;

a digital limiter, configured to receive the digitized compensated signal from the analog to digital converter, and configured to generate a binary signal from the digitized compensated signal; and

a combiner configured to subtract the digitized compensated signal from the binary signal to generate the control signal.

7. (Previously presented) A receiver comprising:

a continuous time filter having an adjustable bandwidth, wherein the continuous time filter is configured to reduce channel induced distortion in information signal received from a communications channel as a function of the adjustable bandwidth, and is further configured to generate a filtered information signal;

a decision feedback equalizer configured to receive the filtered information signal and to reduce inter-symbol interference in the filtered information signal to produce equalized data, and further configured to output a compensated signal; and

a bandwidth controller configured to receive the compensated signal and to adjust the adjustable bandwidth based thereon, and thereby to tune a frequency response of the continuous time filter to approximate an inverse of at least a portion of the frequency response of the communication channel.

8. (Previously presented) The receiver of claim 7 wherein the bandwidth controller is configured to estimate a bandwidth error of the continuous time filter based on the compensated signal, and to adjust the adjustable bandwidth of the continuous time filter based thereon to reduce the bandwidth error.

9. (Previously presented) The receiver of claim 7 wherein the continuous time filter comprises at least one cascaded low pass filter.

10. (Previously presented) The receiver of claim 9 wherein each of the at least one cascaded low pass filters comprises a differential pair of transistors having adjustable capacitive loads coupled to outputs of the differential pair of transistors and configured to adjust the bandwidth of the low pass filter.

11. (Previously presented) The receiver of claim 9 wherein the decision feedback equalizer comprises:

a summer that is configured to generate the compensated signal by combining an equalized feedback signal with the filtered information signal.

12. (Previously presented) The receiver of claim 11 wherein the bandwidth controller comprises:

an analog to digital converter, coupled to the summer, that is configured to digitize the compensated signal;

a digital limiter, coupled to receive the digitized compensated signal from the analog to digital converter, and configured to generate a binary signal from the digitized compensated signal; and

a combiner that is configured to subtract the digitized compensated signal from the binary signal to generate a bandwidth error signal.

13. (Previously presented) The receiver of claim 7 wherein the receiver further comprises an optical detector configured to convert the received information signal to an electrical signal.

14. (Previously presented) A receiver comprising:

receiver means coupled to communication media for receiving the transmitted information signal, the receiver means comprising

filter means for filtering the received information signal,

bandwidth control means for adjusting the bandwidth of the filter means to reduce channel induced distortion in the received information signal, and

equalizer means coupled to the filter means for reducing inter-symbol interference in the filtered information signal.

15. (Previously presented) A method for receiving an information signal, comprising:

filtering a current symbol of an information signal using a first filter bandwidth to obtain a filtered information signal;

equalizing the filtered information signal using a previous symbol of the information signal;

generating a bandwidth error signal from at least the equalized filtered information signal;

adjusting the first filter bandwidth to a second filter bandwidth; and

filtering a next symbol of the information signal with the second filter bandwidth to reduce the bandwidth error signal.

16. (Previously presented) An optical communication device comprising:

a continuous time filter having at least one cascaded low pass filter, each of the at least one cascaded low pass filter having an adjustable bandwidth, wherein the continuous time filter is configured to reduce channel induced pre-cursor interference in an incoming data signal and generate a filtered incoming data signal;

a decision feedback equalizer, coupled to the continuous time filter, and configured to reduce post-cursor interference in the filtered incoming data signal and output a compensated signal; and

a bandwidth controller configured to receive the compensated signal from the decision feedback equalizer and estimate a bandwidth error of the continuous time filter based thereon, the bandwidth controller further configured to generate a control signal based on the bandwidth error and to adjust the bandwidth of the at least one cascaded low pass filter using the control signal, and thereby reduce the bandwidth error as determined from the decision feedback equalizer.

17. (Previously presented) The communication device of claim 16 wherein the continuous time

filter is configured to pre-distort the incoming data signal, based on the control signal, to thereby improve an operation of the decision feedback equalizer.

18. (Previously presented) The communication device of claim 16 wherein each of the at least one cascaded low pass filter comprises a differential pair of transistors having adjustable capacitive loads coupled to outputs of the differential pair of transistors and configured to adjust the bandwidth of the at least one cascaded low pass filter in response to the control signal.

19. (Previously presented) The communication device of claim 17 wherein the decision feedback equalizer comprises a summer that is configured to generate the compensated signal by combining an equalized feedback signal with the filtered incoming data signal.

20. (Previously presented) The communication device of claim 19 wherein the bandwidth controller comprises:

an analog to digital converter, coupled to the summer, that is configured to digitize the compensated signal;

a digital limiter, configured to receive the digitized compensated signal from the analog to digital converter, and configured to generate a binary signal from the digitized compensated signal; and

a combiner configured to subtract the digitized compensated signal from the binary signal to generate the control signal.